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OPTIONAL FORM NO. 10

UNITED STATES GOVERNMENT

Memorandum

25X1A9a

TO : Chief, Engineering Staff, Office of Communications DATE:

ATTN : Mr. [redacted]

FROM : Chief, Real Estate & Construction Division, OL

25X1A6a

SUBJECT: Communications Center, [redacted]

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1. A review of the electrical and mechanical drawings for the Communications Center at [redacted] has been made and the following comments are offered for your consideration.

a. Electrical:

(1) Grounding - Is #6 copper wire solid or braided? Show details on connections of ground wires to fence, ground rods, buildings ground bus, fuel tank and equipment. Specify type of lugs and connectors.

(2) Drawing E-2 - Panel MDP should denote frame size of breakers. All wire types not indicated.

(3) Drawing E-2 - All panels should be indicated 3 phase, 4 wire, SN 120/208 volts A/C.

(4) Drawing E-2 - Utility and technical loads should be served from separate distribution panels.

(5) Drawing E-2 - Note in panel MDP feeder for panel MT only capable of 130 amperes while panel MT has 225 ampere mains.

(6) Drawing E-2 - Feeders for panels UA, TC, and TCA not indicated on drawings.

(7) Drawing E-2 - Power Building - No ground connections shown on engines.

(8) Drawing E-2 - Is a fourth wire required as safety ground to equipment? If so, panel should have a ground lug separate from neutral.

(9) Drawing E-2 - Specify number of spaces to be left in panel and extend bus full length.

(10) Drawing E-2 - No connection shown between auto-transfer switch and main disconnect. On Drawing E-1 size is not indicated.

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(11) Drawing E-2 - Size of fuel oil pump disconnect not indicated.

(12) Drawing E-2 - Panel MU, MT, TA, and TB should have panel schedules.

(13) Drawing E-2 - Home runs not indicated to panel designator. Power Plant should have 60A panel.

(14) Drawing E-2 - No control wiring indicated from transfer switch to generator.

(15) Drawing E-2 - Provide outlet for battery charger in Power Building.

(16) Drawing E-2 - Provide lighting fixture over outside door.

(17) Drawing E-2 - Is metering required at power service entrance?

(18) Drawing E-1 - Position engines to leave space for future set.

(19) Drawing E-1 - Motor disconnects not sized for fan coil units.

(20) Drawing E-1 - Motor disconnects and starter not sized for incinerator.

(21) Drawing E-1 - Riser diagram not complete, show all feeder and conduit sizes.

(22) Drawing E-1 - Circuit MU 2-4-6 stubbed up in tape relay room. Show wire and conduit sizes.

(23) Drawing E-2 - Install exit lighting.

(24) Drawing E-1 - Install convenience outlet receptacle in Incinerator Room, toilets, and kitchen area.

(25) Drawing E-1 - Check location toilet and Utility Room exhaust fan (kitchen).

(26) Drawing E-3 - Panel Schedule - Panels not properly designated. Should be 3 phase, 4 wire, SN, 120/208 volt A/C or 1 phase, 3 wire, SN, 120/240 volts A/C. Asymmetrical ampere rating of circuit breakers to be specified.

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(27) Drawing E-3 - Note number of poles in panels and spare breakers required.

(28) Drawing E-3 - Show wire and feeder designation on panel schedule.

(29) Drawing E-3 - Note breaker frame sizes.

(30) Drawing E-3 - Note starter-disconnect size for fuel oil transfer pumps.

(31) Drawing E-3 - Electrical Riser diagram should indicate wire and conduit sizes.

(32) Drawing E-3 - Relocate main transformers so that bus duct run will be shortened and feed directly into main disconnect.

(33) Drawing E-3 - Specify size and type of bus duct.

(34) Drawing E-3 - Indicate size of wire and conduit from transfer switch to generators.

(35) Drawing E-3 - Feeders from Power Building to Transmitter Building not sized.

(36) Drawing E-3 - Feeder from main disconnect to transformer switch not sized.

(37) Drawing E-3 - No conduit or wire indicated to feeder panels from main distribution panel.

(38) Drawing E-3 - No exit light indicated. 25X1C4e

(39) Drawing E-3 - Power Building should be located [redacted] to shorten power runs to the main distribution panel.

(40) Drawing E-3 - No details on transformer substation. Is this GFE or CFE? Who installs?

(41) Drawing E-3 - No outside light at Mechanical Room.

(42) Drawing E-3 - Install convenience outlets in Mechanical Room, toilet.

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(43) Drawing E-3 - Position engines to provide for future installation of additional unit.

(44) Drawing M-2 - Exhaust support detail. Support detail not adequate.

(45) Drawing M-2 - Section "A-A". Show flexible couplings in exhaust.

(46) Drawing M-2 - Is a fuel oil return necessary?

(47) Drawing M-2 - Fuel oil piping to engines from day tank not correct. Should not run under engines.

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(48) Drawing M-2 - Concrete slab and concrete container around fuel tank not necessary. Why not use a decorative pierced block wall and leave top open?

(49) Drawing M-2 - Is fire detection or evacuation system necessary?

(50) Drawing A-6 - Delete wiring trench.

(51) Drawing S-5 - Show location of engine foundation bolts.

(52) Drawing S-5 - Provide fire stats in all air conditioning ducts to shut down fans.

(53) Drawing S-5 - Flourescent fixture specifications: To comply with MIL Specifications, MIL-1-16910A and MIL-1-26600. Interference free from 14 KC to 10,000 MC. Fixtures to be cold cathode type.

b. Mechanical:

Receiver Site:

(1) Consider the use of a self-contained chiller (air cooled) to be located outdoors. The chiller shall have a minimum of two compressors and condensing fans. The chiller shall be weatherproofed. To illustrate type of chiller, Governair Corporation, manufacture type, recommended above. Alternate proposal is to install a multi-compressor chiller in Storage Room.

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(2) The chiller shall be sized to provide chilled water to the proposed Tape Relay Room.

(3) With chilled water system the interior A/C system (one fan coil unit) can be changed to two fan coil units two-way air deflectors. Minimum of two fan speeds and thermostatically control by-pass valves on all units.

(4) Provide air relief in the air conditioned areas.

(5) Provide ventilation in storage area. Can be accomplished by installing louvers in the outside wall (min. area) and louvers in door.

(6) Provide "S" type (piping) in new vault area for ventilation.

(7) Incinerator: Check stack location. Drawing No. A-2 and A-3 does not check with S-3 if a straight stack from incinerator is to be used. Provide walking room around incinerator.

(8) Condensate Drain: Run condensate drains into shallow gravel drain pits if necessary.

(9) Fuel Tank and Lines: Fuel oil tank to be mounted on concrete saddle. Install necessary screening walls near tank. Size fuel oil piping and indicate pipe covering. Provide insulation between tank and saddle.

(10) Reduce air intake area in Power House.

(11) Drawing U-1 - Existing sanitary sewer should be relocated from under Power Building.

(12) Drawing U-1 - Show sizes of fuel oil lines.

(13) Drawing M-2 - Delete motor operated louvers.

(14) Drawing S-4 - Ground fuel tank.

(15) Drawing S-5 - Delete pad for switchgear.

(16) Drawing S-5 - Engine pad should be isolated from floor slab.

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Transmitter Site:

(1) If the microwave towers can be relocated, consider reversing the Mechanical Room, latrine, and corridor with maintenance shop and storage area. This change, if acceptable, would decrease the length of electric feeder and the fresh air inlet would not interfere with building expansion if ever required.

(2) When completing the A/C drawings include refrigerant piping detail, pipe sizes, vertical view on the air handler and duct connections.

(3) The A/C system shall be designed to maintain 82 to 85 degree temperature in Transmitter Room and not the usual room comfort. This should reduce the A/C capacity if not already considered.

(4) Consider the use of 100% outside air and provide air relief.

(5) Provide duct heater in small air distribution duct if one zone air handling unit is used.

(6) In the event of air handling unit break-down, provide wall mounted ventilators or fans at each end of Transmitter Room. The ventilators or fans shall be of the blow-in type. The manual operated relief air dampers (2) to be installed in the North Wall.

(7) Fuel Oil Tank: Show all piping connections and size piping. Apply a mastic coating between concrete saddle and tank.

(8) The well shall be at least 50 feet away from sewage system. Provide septic tank.

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Distribution:
Orig. & 1 - Addressee
1 - OL/RECD Project
1 - OL/RECD/UEB Chrono

OL/RECD/UEB/[redacted]:ded
(19 Sept. 1966)

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